

Work Order ID 85024

\*85024\*

Page 1

May-31-12 11:55:26 AM

Item ID: D206-642-541

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Replacement Skidtube

Start Date: 31/05/2012 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan: *MLJ*

Date: *12/05/31* Tooling:

Date:

Run Start \*NR1\*

QC:

Date: SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D3274

D

100

0.00

\*100\*

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPP D206-642-541

CHG003

*N/A*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 85024****\*85024\***

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Item ID: D206-642-541

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**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

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Start Date: 31/05/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	<b>*NR1*</b>
	QC:	Date:	SPC (Y/N):	Date:		Stop	<b>*NR2*</b>

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110	Skidtubes	0.00							
<b>*110*</b>									
Skidtubes									
Skidtubes									

**Memo**

0.00

\*\*\*VERIFY AND INSPECT THE MATERIAL PRIOR TO USE\*\*\*

1- Bend FWD end of tube using bend prog D3274 FWD and foil 10 as per dwg D3274, cut fwd end of tube with saw table setup D3274.

2- remove fwd indexing ridge as per dwg D3274. Prepare for welding

3- weld fwd cap as per dwg D3274 and QSI004

AR Aluminum Rod Batch: m120/64

4- grind fwd cap weld on top surface only

5- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

6-Drill Aft cap pilot hole using DT8025

7 -Cleco DT8025 in position and install pilot hole drill Jig DT8742A,B,C,D. Drill 3/16" pilot holes as per Dwg D3274

8 -Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe batch #

9 -Open aft end cap holes to Ø0.208" as per Dwg D3274. Deburr aft end.

DP 12-7-11

-7 CF 12-7-13

3 BE 12-07-16

DC 12/07/16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**\*N900040100\***

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Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 31/05/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

114

QC5- Inspect part completeness to step on W/O

0.00

**\*114\***

QC

Memo

Quality Control

0.00

116

QC10- Inspect visual per QSI004- ground welds

0.00

**\*116\***

QC

Memo

Quality Control

0.00

120

Chemical Conversion Coat per QSI005 4.1

0.00

**\*120\***

HandFinish

Memo

Hand Finishing

0.00

1 76 12-7-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 31/05/2012 Start Qty: 1.00

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Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID Tool # Plan Code Accept Qty Reject Qty Reject Number Insp. Stamp

130

QC7-Inspect Chemical Conversion Coat

0.00

**\*130\***

QC

Memo

0.00

Quality Control

D40  
03  
89

DP 12-7-17

150

0.00

**\*150\***

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Open Ø0.313" and 0.375" crossbolt spacer holes as per Dwg D3274

2-Deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from inside the tube

3-Bond web in place as per Dwg D3274 & QSI 015.

A/RSikaflex-291 M122/36

Sikaflex expire date: 13-3-14

Start: 12/07/17 Time: 8:00

Finish: 12/07/23 Time: 9:00

(Adhere for 12 hours)

DC 12/07/17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 31/05/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160

QC5- Inspect part completeness to step on W/O

0.00

**\*160\***

QC

Memo

0.00

Quality Control

DAS  
03  
12-7-18

170

Skidtubes

0.00

**\*170\***

Skidtubes

Memo

0.00

Skidtubes

1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.

SAD 12-07-18

2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1T2  
OPEN HOLES TO .297" Deburr3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD  
END OF TUBE  
DEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES)  
REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES

SAD 12-07-18

4- Countersink crossbolt spacer holes as per Dwg D3274

5- prepare for welding

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR: 21-5-S1		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Item ID: D206-642-541

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 31/05/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

180

QC5- Inspect part completeness to step on W/O

0.00

**\*180\***

QC

Memo

0.00

Quality Control

190

Skidtubes

0.00

**\*190\***

Skidtubes

Memo

0.00

Skidtubes

1-Insert D2649 & D3275-1 crossbolt spacers. Weld as per QSI 004 and Dwg D3274. Remember to back drill each hole before welding the other side. Use aluminum rod

A/RAluminum Rod M122324

BE 12/07/23

3-Grind cross bolt welds flush as per Dwg D3274. SAJ 12-07-23

4-Counterbore 5/16" x 0.750" deep as per Dwg D3274 and deburr.

DP 12-7-25  
1/DC 12/07/25

DAS  
18  
19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR: 88		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Page 7

May-31-12 11:55:26 AM

Item ID: D206-642-541

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**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 31/05/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

200

QC5- Inspect part completeness to step on W/O

0.00

**DAS**  
**16**  
**9-83** 17/6/25

**\*200\***

QC

Memo

0.00

Quality Control

210

QC10- Inspect visual per QSI004- ground welds

0.00

**DAS**  
**16**  
**9-83** 21/6/25

**\*210\***

QC

Memo

0.00

Quality Control

220

Pressure Wash per QSI005 4.3

0.00

**\*220\***

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch

1 76 12-7-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

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**\*85024\***

Page 8

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**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 31/05/2012 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

230

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

**\*230\***

Powdercoat

Powder Coating

Memo

START TIME: 3:15

OVEN TEMPERATURE: 320 °F

FINISH TIME: 3:45

0.00

240

QC3- Inspect Part Finish

0.00

**\*240\***

QC

Quality Control

Memo

0.00

250

HandFinishing

0.00

**\*250\***

HandFinish

Hand Finishing

Memo

1-Install Nut Plate as per Dwg D3274. Apply LPS-PROCYON to Nut Plate and rivets.

A/RN/ALPS-PROCYON 114596

2-Install inserts as per Dwg D3274. Use a drop of Sikaflex inside insert holes a

A/RSikaflex-291 122130

Sikaflex expire date: 11/07

0.00

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries



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May-31-12 11:55:26 AM



**\*85024\***

Page 9

Item ID: D206-642-541

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 31/05/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID Tool # Plan Code Accept Qty Reject Qty Reject Number Insp. Stamp

260

QC5- Inspect part completeness to step on W/O

0.00

**\*260\***

QC

Memo

0.00

Quality Control

Inspect Nut Plate & Inserts

1  $\phi$  BR 12-7-26

270

HAND FINISHING RESOURCE #1

0.00

**\*270\***

HandFinish

Memo

0.00

Hand Finishing

1-Install wearpads & gaskets as per Dwg D3274.

2-Install ring as per Dwg D3274

A/RSikaflex-291 122130

Sikaflex expire date: 14/07

3-Inspect for foreign objects as per QSI 024

4-Spray inside of tube on both sides of web with LPS-3

A/R LPS-3 Batch: N/A

5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/RSikaflex-291 122130

Sikaflex expire date: 14/07

1  $\phi$  (20) 12/07/26

Pro  $\rightarrow$

Procyon

114596

# Dart Aerospace Ltd

W/O: 85024		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D706-642-541 PAR #:            Fault Category: inspection <sup>Landing Gear / SLID tubes +</sup> NCR: Yes No DQA:    Date: 12/08/13  
 Resolution: Acceptable Disposition: Acceptable QA: N/C Closed:    Date: 12/08/14

NCR: 12-1679		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/07/12	# 270 For # 190.4	Found while inspecting other tubes that the counter bore were too deep. measured 0.820" to 0.830" should be 0.75" +0.030" -0.030"	DAS 16 9-89 12.1.17	Acceptable per Attached Email From Chris P to David S July 27 <sup>th</sup> , 2012 see attached email	DAS 16 9-89 12-7-2	DAS 16 9-89 12/13/30	DAS 16 9-89 12/11/13	DAS 16 9-89 12/15/12
12/07/12		P.C. missed at inspection and setting of counter bore was incorrect. operator ERROR LOA				\$14.88		
12/07/12	# 270	During Assembly Aft CAP D2646 was dropped and caused a dent with P.C. slinging out of employees hands. LOA	DAS 16 9-89 052042 12/07/12	Scrap + Destroy QTY x1 D2646 + Replen D2646 B 85443	DAS 16 9-89 12/07/30	DAS 16 9-89 12/07/30	DAS 16 9-89 052042 12/07/12	DAS 16 9-89 12/07/12

NOTE: Date & initial all entries

**Linda Lacelle**

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**From:** Chris Provencal <cprovencal@dartaero.com>  
**Sent:** July-27-12 11:15 AM  
**To:** David Shepherd  
**Cc:** psmith@dartaero.com; 'L Lacelle'; 'Isam El-Kassis'; 'Eric Downing'; Mike Petsche  
**Subject:** RE: D206 skids

David,

The affected tubes are several float (-541) and regular tubes (-351). The float holes aren't counterbored and are unaffected. As the crossbolt spacers are not loaded except in bearing by the bushings, the additional length of the counterbore would have no effect on the strength of the crossbolt spacer from regular loading conditions. There would be a small reduction in buckling strength from sideways crushing loads, which doesn't represent a critical loading condition per the FAR requirements.

I will accept these tubes based on that rational. This email is an FYI in case you have an objection.

-Chris

---

**From:** Eric Downing [<mailto:edowning@dartaero.com>]  
**Sent:** Friday, July 27, 2012 8:34 AM  
**To:** 'Provencal, Chris'  
**Cc:** psmith@dartaero.com; 'L Lacelle'; Isam El-Kassis  
**Subject:** D206 skids  
**Importance:** High

Good morning Chris

I need to see you as soon as you read this message I have found the counter bore depth on QTYX9 D206 skids are too deep. I am measuring 0.820"-0.830" and it should be at 0.75+/-0.030". I have 6 in progress and 3 already painted and assembled. What happened was that I had inspected some 206 skids and found that the counter bore was correct but I didn't know that they had changed the counter bore part way through the day and was not set up correctly so I had assumed that they were still the same depth and when I measured the first one today like I do always the depth was not correct at all.

I need to know if this will be acceptable or that we need to rework all the skids.

Thanks  
Eric Downing  
QC Corrdinator  
Dart Aerospace LTD

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width:100%; border: none;"> <tr> <td style="width: 25%;">Skid-tube <input type="checkbox"/></td> <td style="width: 25%;">Crosstube <input type="checkbox"/></td> <td style="width: 25%;">Water Jet <input type="checkbox"/></td> <td style="width: 25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>						Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>																								
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>																								
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>																								
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																									
<b>Root Cause</b>	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector																		
Doc/Data <input type="checkbox"/>																											
Equip/Tooling <input type="checkbox"/>																											
Operator <input type="checkbox"/>																											
Material <input type="checkbox"/>																											
Setup <input type="checkbox"/>																											
Other <input type="checkbox"/>																											
Process <input type="checkbox"/>																											
Supplier <input type="checkbox"/>																											
Training <input type="checkbox"/>																											
Unapproved <input type="checkbox"/>																											
<b>FAULT CATEGORY</b>																											
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other																

# Work Order ID 85024

May-31-12 11:55:26 AM

**\*85024\***

Page 10

Item ID: D206-642-541

Accept

**\*N9000040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 31/05/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

280

QC5- Inspect part completeness to step on W/O

0.00

**\*280\***

QC

Memo

0.00

Quality Control

290

Identify as per dwg & Stock Location: \_\_\_\_\_

0.00

**\*290\***

Packaging

Memo

0.00

Packaging

300

QC21- Final Inspection - Work Order Release

0.00

**\*300\***

QC

Memo

0.00

Quality Control

DAS  
16  
9-89  
12/17/30

12/17/31

12/17/31

MCJ 12/07/31

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

May-31-12 11:55:30 AM

Page 1

Work Order ID: 85024

\*85024\*

Parent Item: D206-642-541

\*D206-642-541\*

Parent Item Name: Replacement Skidtube

Start Date: 31/05/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

## Comments:

IPP Rev:B05.09.23 Revised per D206-642 Rev. JKJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC  
 IPP Rev:F 08-06-02 add comment DD verified by:EC  
 IPP Rev:G 08-10-09 revise details DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2600-1-190

Manufactured

No

110

Each

106.0000

1

\*D2600-1-190\*

Extrusion Round 3" 206

\*\*

12-7-11

### Location

### Loc Qty

### Loc Code

HALL

45

69622

45

LG

61

76912

61

D3285-1

Manufactured

No

110

Each

42.0000

1

1

\*D3285-1\*

Cap

\*\*

BE 12-07-16

### Location

### Loc Qty

### Loc Code

LG002

42

52511

1

52647

41

D3282-041

Manufactured

No

150

Each

10.0000

1

1

\*D3282-041\*

Float Web (206L/407)

\*\*

12/02/17

### Location

### Loc Qty

### Loc Code

LG

10

80837

1

82651

9

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

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Page 2

Work Order ID: 85024

**\*85024\***

Parent Item: D206-642-541

**\*D206-642-541\***

Parent Item Name: Replacement Skidtube

Start Date: 31/05/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

190

Each

415.0000

12

12

**\*D2649\***

Cross Bolt Spacer

**\*\***

BE 12/07/23  
BB5586 x 12

Location

Loc Qty

Loc Code

LG

272

77574

2

79502

8

79503

251

79564

4

79565

7

LG001

143

65317

1

68224

2

68507

11

71355

2

72704

2

72841

11

73390

8

73857

21

73858

53

73859

4

73860

4

78020

6

78583

2

79566

16

D3275-1

Manufactured No

190

Each

65.0000

12

12

**\*D3275-1\***

Crossbolt Spacer

**\*\***

BE 12/07/23

Location

Loc Qty

Loc Code

LG002

65

66930

1

83264

64

12

May-31-12 11:55:30 AM

Shop Packet Print

Page 2

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Page 3

Work Order ID: 85024

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

\*85024\*

\*D206-642-541\*

Start Date: 31/05/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

CR3212-4-03

Purchased

No

250

Each

1.276.000

2

2

\*CR3212-4-03\*

Cherry Rivet

\*\*

2

SP

12/07/26

Location

Loc Qty

Loc Code

FP002

348

114859 ✓

348

ST331

928

110139

2

119017

926

D3415-041

Manufactured

No

250

Each

32.0000

1

1

\*D3415-041\*

Nut Plate

\*\*

1

SP

12/07/26

Location

Loc Qty

Loc Code

ST042

32

67605

1

82151 ✓

31

CCR264SS3-3

Purchased

No

250

Each

362.0000

2

2

\*CCR264SS3-3\*

Cherry Rivet

\*\*

2

SP

12/07/26

Location

Loc Qty

Loc Code

ST331

362

113973

2

117840 ✓

79

119017

281

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Page 4

Work Order ID: 85024

\*85024\*

Parent Item: D206-642-541

\*D206-642-541\*

Parent Item Name: Replacement Skidtube

Start Date: 31/05/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-130

Purchased

No

250

Each

2,457.000

78

78

\*AI S4-1032-130\*

Insert

\*\*

78

28

12/07/26

\* \*

## Location

## Loc Qty

## Loc Code

ST280

121444 ✓

205

119084

116

120671

89

ST281

74

120807

36

120837

38

ST282

2178

121269

2178

D3536-15

Manufactured

No

270

Each

14.0000

1

1

\*D3536-15\*

Gasket

\*\*

1

28

12/07/26

## Location

## Loc Qty

## Loc Code

FP002

85604 ✓

14

73318

12

81343

2

D3536-23

Manufactured

No

270

Each

11.0000

1

1

\*D3536-23\*

Gasket

\*\*

1

28

12/07/26

## Location

## Loc Qty

## Loc Code

FP002

11

74510

1

83377

10

85295

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Shop Packet Print

Page 4

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Work Order ID: 85024

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

\*85024\*

\*D206-642-541\*

Start Date: 31/05/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3536-35

Manufactured No

270 Each

16.0000 1 1

\*D3536-35\*

Gasket

\*\*

OP

12/07/26

## Location

## Loc Qty

## Loc Code

FP002

85605✓

16

81340

5

82065

11

D3536-39

Manufactured No

270 Each

10.0000 1 1

\*D3536-39\*

Gasket

\*\*

OP

12/07/26

## Location

## Loc Qty

## Loc Code

FP

9

82252✓

9

FP002

1

73317

1

D3535-15

Manufactured No

270 Each

11.0000 1 1

\*D3535-15\*

Wearshoe

\*\*

OP

12/07/26

## Location

## Loc Qty

## Loc Code

FP001

11

80328

1

81354

10

85291✓

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

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Work Order ID: 85024

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

**\*85024\***

**\*D206-642-541\***

Start Date: 31/05/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3535-35

Manufactured No

270

Each

29.0000

1

1

\*\*

1

(2P)

12/07/26

**\*D3535-35\***

Wearshoe

Location

Loc Qty

Loc Code

FP001

29

67598

1

70815

1

78873

13

79849

1

82064

1

83638 ✓

12

D3535-39

Manufactured No

270

Each

22.0000

1

1

\*\*

1

(2P)

12/07/26

**\*D3535-39\***

Wearshoe

Location

Loc Qty

Loc Code

FP001

22

69759

1

74513 ✓

3

81359

18

D3535-23

Manufactured No

270

Each

17.0000

1

1

\*\*

1

(2P)

12/07/26

**\*D3535-23\***

Wearshoe

Location

Loc Qty

Loc Code

FP001

17

81355

1

83375 ✓

16

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Page 7

Work Order ID: 85024

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

**\*85024\***

**\*D206-642-541\***

Start Date: 31/05/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3537-3 Manufactured No

270 Each

18.0000

1 1

**\*D3537-3\***

Wearpad

\*\*

1



12/07/26

## Location

## Loc Qty

## Loc Code

FP002

85481✓

18

78836

2

81363

16

D3537-1 Manufactured No

270 Each

92.0000

9 9

**\*D3537-1\***

Wearpad

\*\*

9



12/07/26

## Location

## Loc Qty

## Loc Code

FG

86238✓

10

79833

10

FP002

82

69817

5

81360

14

81362

22

83254

1

83255

3

84091

37

AN960C10L



NAS1149C0332

Purchased

No

270

Each

0.0000

80

80

**\*AN960C10I \***

washer

\*\*

80



12/07/26

AN960C416



NAS1149C0463

Purchased

No

270

Each

0.0000

1

1

**\*AN960C416\***

washer

\*\*

1



12/07/26

122063✓

119097✓

May-31-12 11:55:31 AM

Shop Packet Print

Page 7

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

**Part No:** \_\_\_\_\_ **PAR #:** \_\_\_\_\_ **Fault Category:** \_\_\_\_\_ **NCR:** Yes No **DQA:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
**Resolution:** \_\_\_\_\_ **Disposition:** \_\_\_\_\_ **QA: N/C Closed:** \_\_\_\_\_ **Date:** \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

May-31-12 11:55:31 AM

Page 8

Work Order ID: 85024

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

\*85024\*

\*D206-642-541\*

Start Date: 31/05/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3672-1

Manufactured No

270 Each

1,112.000 2 2

\*D3672-1\*

Phenolic Washer

\*\*

2

OP

12/07/26

## Location

## Loc Qty

## Loc Code

ST060

1112

72229

4

76277

108

80369 ✓

500

83608

500

AN3C4A

Purchased No

270 Each

1,362.000 80 80

\*AN3C4A\*

BOLT

\*\*

80

OP

12/07/26

## Location

## Loc Qty

## Loc Code

ST350

1362

120187

57

120521

28

120769

38

121205

1000

121556

239

AN4C5A

Purchased No

270 Each

195.0000 1 1

\*AN4C5A\*

BOLT

\*\*

1

OP

12/07/26

## Location

## Loc Qty

## Loc Code

ST355

195

112243 ✓

136

119017

59

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Work Order ID: 85024

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

\*85024\*

\*D206-642-541\*

Start Date: 31/05/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2646

Manufactured No

270

Each

72.0000

1

1

\*D2646\*

Aft Cap

\*\*

1

OP

12/07/26.

## Location

## Loc Qty

## Loc Code

FP002

85443✓

72

62678

5

68280

5

70945

1

71070

2

73294

1

73825

2

78018

3

79562

12

81974

41

D3413-1

Manufactured No

270

Each

69.0000

1

1

\*D3413-1\*

Ring

\*\*

1

OP

12/07/26.

## Location

## Loc Qty

## Loc Code

ST420

4

79233

4

ST464

65

76754

1

80224

4

83307✓

40

83867

20

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



**DART**

DESIGN <b>CP</b>	DRAWN BY <b>PH</b>	<b>DART AEROSPACE USA, INC.</b> PORT HADLOCK, WA	
CHECKED <b>[Signature]</b>	APPROVED <b>[Signature]</b>	DRAWING NO. <b>D3274</b>	REV. D SHEET 1 OF 4
DATE <b>06.12.19</b>		TITLE <b>SKIDTUBE ASSEMBLY</b> SCALE <b>NTS</b>	
<b>A</b>	<b>04.03.15</b>	<b>NEW ISSUE</b>	
<b>B</b>	<b>04.08.09</b>	<b>MOVE SADDLE HOLE: 42.14 WAS 42.76</b>	
<b>C</b>	<b>05.03.16</b>	<b>ADD -043; NEW INSERTS</b>	
<b>D</b>	<b>06.12.19</b>	<b>NEW INSERTS, SS WEARSHOE + GASKET</b>	

**RELEASED**07.02.12 **[Signature]****DEO ATTACHED**

Qty -041	Qty -043	Part Number	Description
X		D3274-041	SKIDTUBE ASSEMBLY
	X	D3274-043	SKIDTUBE ASSEMBLY
1	1	D2600-1-240	EXTRUSION
1	1	D2646	AFT CAP
12	12	D2649	CROSS BOLT SPACER
12	37	D3275-1	CROSS BOLT SPACER
1	1	D3282-041	FLOAT WEB
1	1	D3285-1	CAP
1	1	D3413-1	RING
1	1	D3415-041	NUT PLATE
1	1	D3535-15	WEARSHOE
1	1	D3535-23	WEARSHOE
1	1	D3535-35	WEARSHOE
1	1	D3535-39	WEARSHOE
1	1	D3536-15	GASKET
1	1	D3536-23	GASKET
1	1	D3536-35	GASKET
1	1	D3536-39	GASKET
9	9	D3537-1	WEARPAD
1	1	D3537-3	WEARPAD
78	78	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
80	80	AN3C4A	BOLT
1	1	AN4C5A	BOLT
1	1	AN960C416	WASHER
80	80	AN960C10L	WASHER
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	NAS1515H3L	WASHER

**GENERAL NOTES:**

1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
3. ALL HOLES DRILLED ON CENTERLINES.
4. BOND D3282-041 FLOAT WEB INTO D3274-1/-3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
5. WELDING TO BE DONE PER DART QSI 004.
6. FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1  
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
7. DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX -241/-291.
8. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

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12/05/11

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

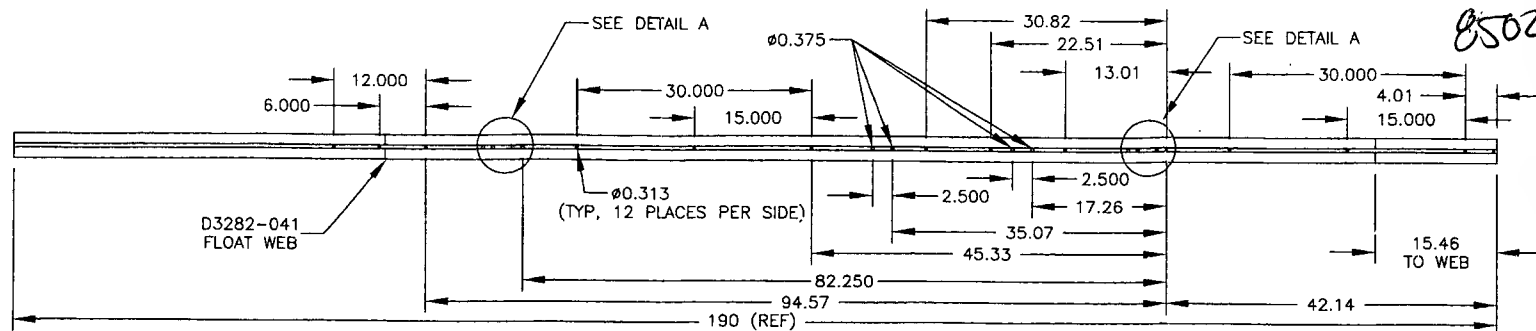
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

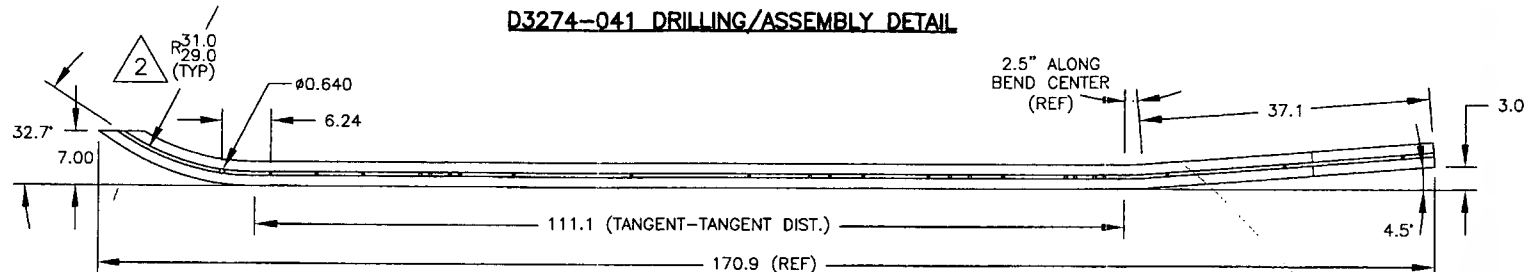
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

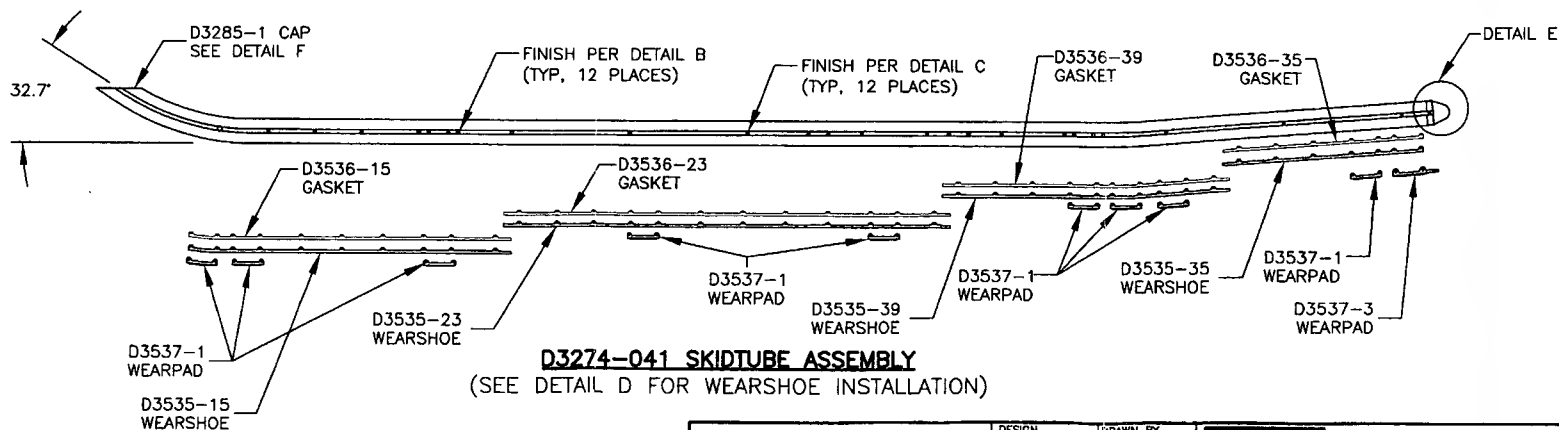
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**D3274-041 DRILLING/ASSEMBLY DETAIL**



**D3274-041 BEND/DRILLING DETAIL**



**D3274-041 SKIDTUBE ASSEMBLY**

(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

07.02.12

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CHECKED	#	APPROVED	#	DRAWING NO.	REV. D
DATE	06.12.19			D3274	SHEET 2 OF 4
				TITLE	SCALE
				SKIDTUBE ASSEMBLY	1:15

**Dart Aerospace Ltd**

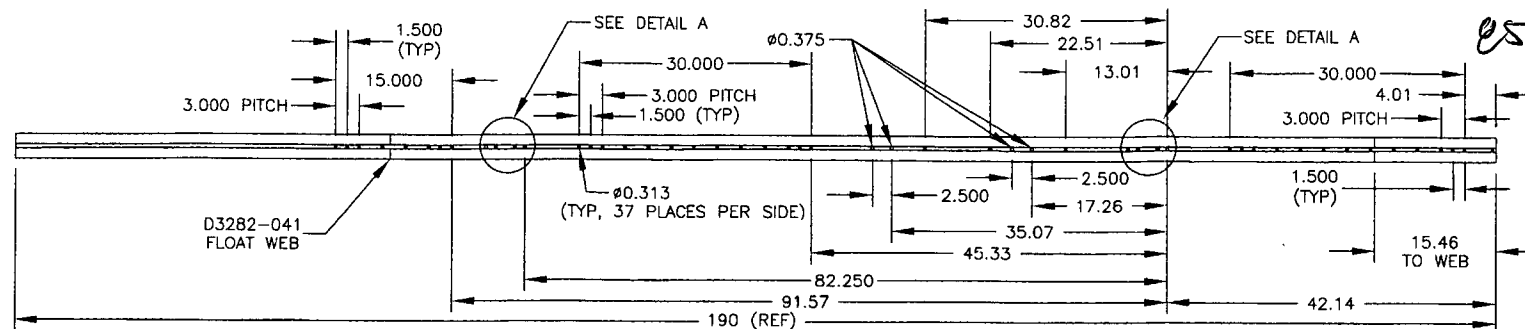
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

**Part No:** \_\_\_\_\_ **PAR #:** \_\_\_\_\_ **Fault Category:** \_\_\_\_\_ **NCR:** Yes No **DQA:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
**Resolution:** \_\_\_\_\_ **Disposition:** \_\_\_\_\_ **QA: N/C Closed:** \_\_\_\_\_ **Date:** \_\_\_\_\_

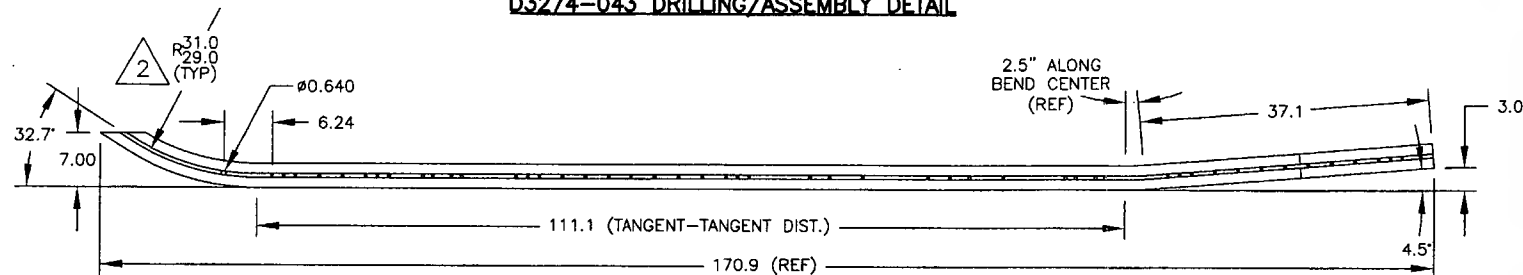
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

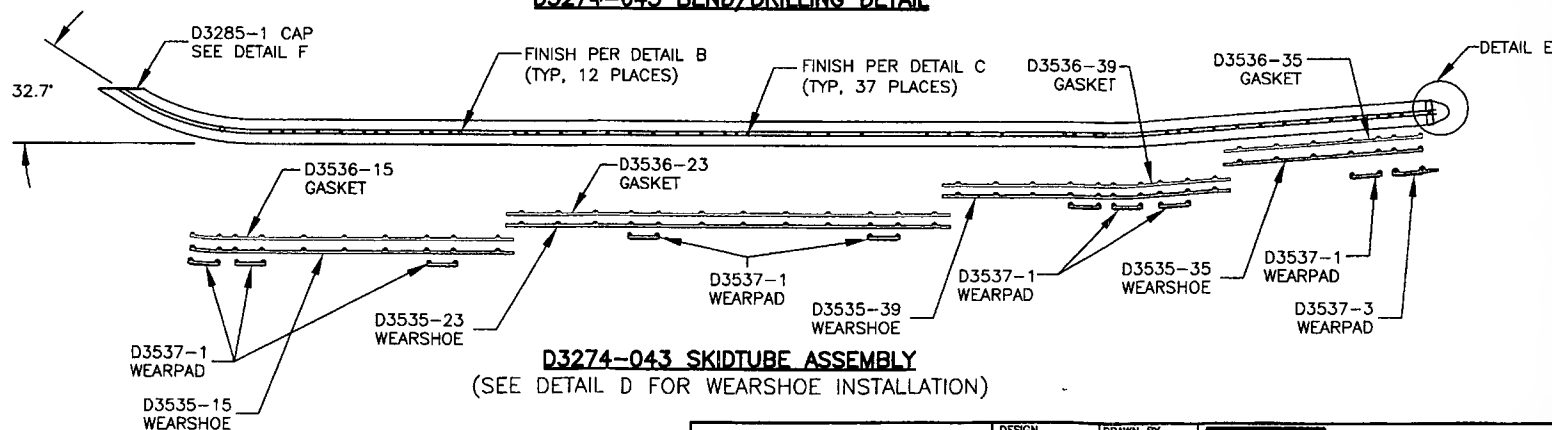
DEO ATTACHED



**D3274-043 DRILLING/ASSEMBLY DETAIL**



**D3274-043 BEND/DRILLING DETAIL**



**D3274-043 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

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		DATE 06.12.19	TITLE SKIDTUBE ASSEMBLY		SCALE 1:15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

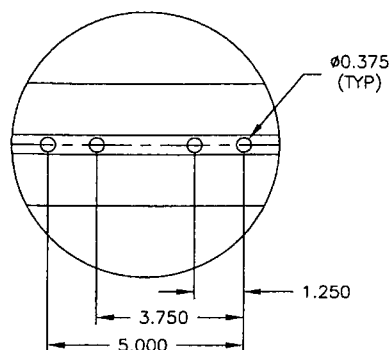
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

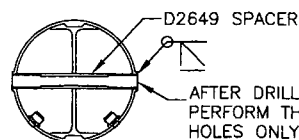
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# **DETAIL A: DRILL DETAIL**

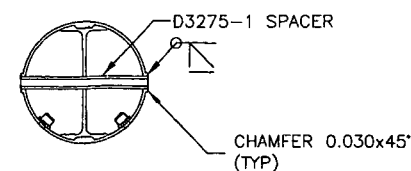


# **DETAIL B** FOR $\phi 0.375$ HOLES ONLY

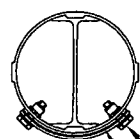


- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR  $\phi 0.375$   
HOLES ONLY:
1. CHAMFER HOLE  $0.030 \times 45^\circ$
  2. INSERT D2649 SPACER
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE TO  $\phi 0.313 \times 0.75$  DEEP

# **DETAIL C** FOR $\phi 0.313$ HOLES ONLY

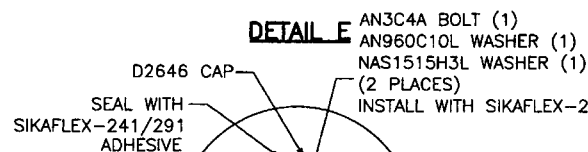


# **DETAIL D**



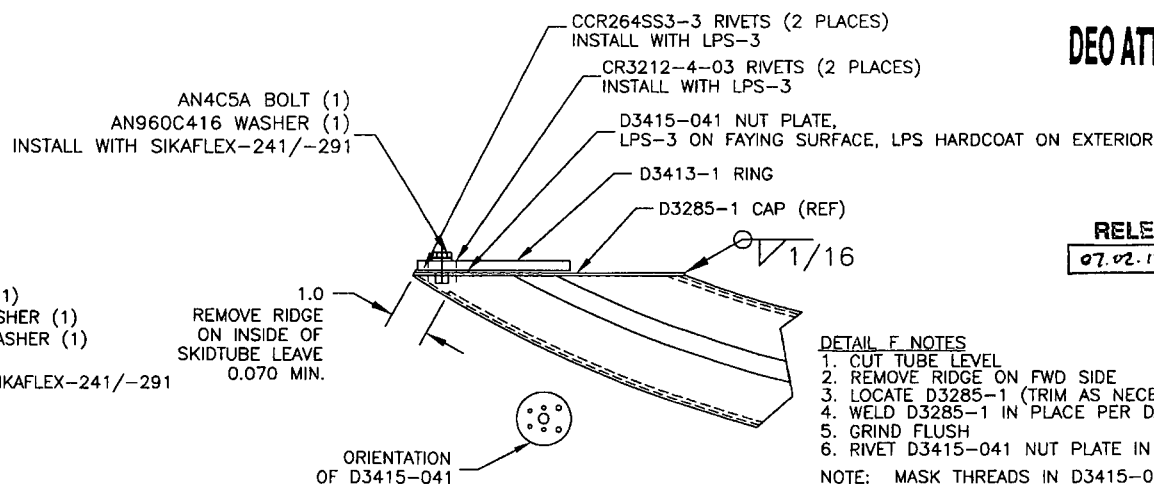
- ALS7-1032-130 INSERT (1)  
AN3C4A BOLT (1)  
AN960C10L WASHER (1)  
(78 PLACES)  
GASKET/WEARSHOE/WEARPAD (REF)

# **DETAIL E**



- D2646 CAP  
SEAL WITH  
SIKAFLEX-241/291  
ADHESIVE  
AN3C4A BOLT (1)  
AN960C10L WASHER (1)  
NAS1515H3L WASHER (1)  
(2 PLACES)  
INSTALL WITH SIKAFLEX-241/-291  
 $\phi 0.208$  (2 PLACES)  
DRILL PRIOR TO INSTALLING  
D2646 CAP  
BORE OUT END OF SKIDTUBE  
TO 0.75 DEPTH AND 0.070 WALL  
0.400

# **DETAIL F: END FINISHING DETAIL**



DEO ATTACHED

RELEASED

07.02.12

- DETAIL F NOTES**
1. CUT TUBE LEVEL
  2. REMOVE RIDGE ON FWD SIDE
  3. LOCATE D3285-1 (TRIM AS NECESSARY)
  4. WELD D3285-1 IN PLACE PER DART QSI 004
  5. GRIND FLUSH
  6. RIVET D3415-041 NUT PLATE IN PLACE
- NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

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CHECKED	CP	APPROVED	PH	DRAWING NO.	REV. D
DATE	06.12.19	TITLE	SKIDTUBE ASSEMBLY		
				SHEET 4 OF 4	SCALE 1:3

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries



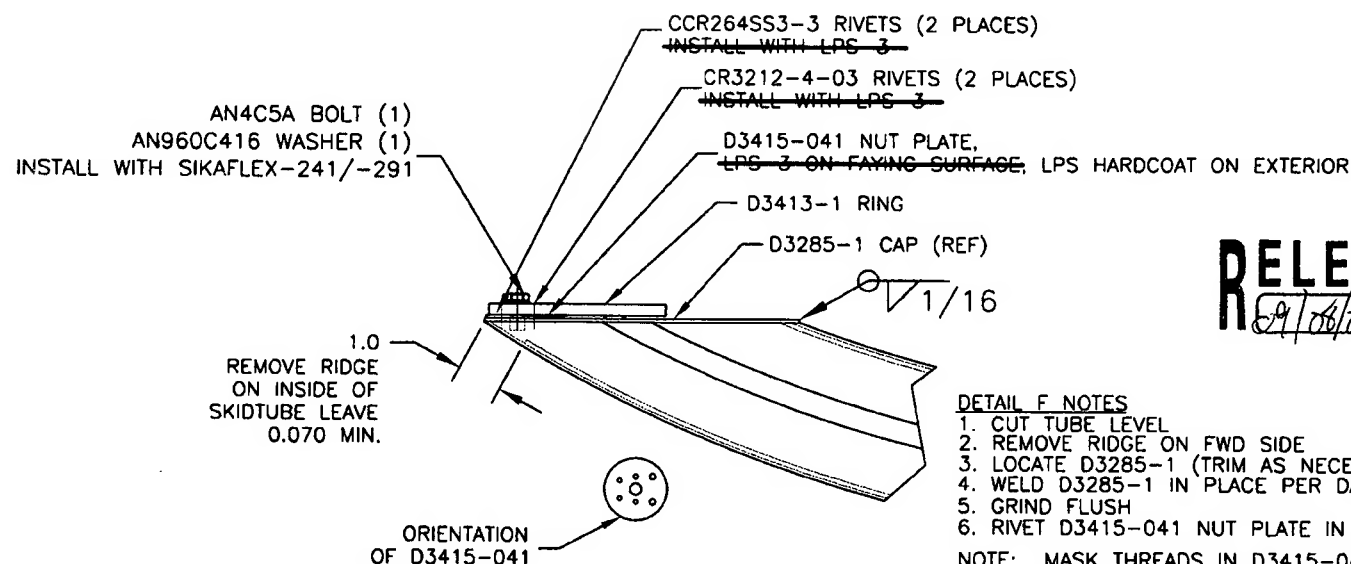
DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY	REV. D	DART AEROSPACE USA, INC ENGINEERING ORDER	D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 09.06.17	DATE 09.06.23	DATE 09/06/23	DATE 09/06/23	DATE 09.06.23		

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: ~~"SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS 3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF  
POWDER COATING WITH MEK DEGREASER."

AMEND DETAIL F AS SHOWN:

### DETAIL F: END FINISHING DETAIL



**RELEASED**  
09/08/23

#### DETAIL F NOTES

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



NO. 297

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job #: 80951  
Part #: A206-642-151  
Description: Skid tube  
Welding Process: Tig ☒ Mig ☐  
Base material: Alum  
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Incomplete Penetration:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Incomplete Fusion:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Cracks:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Overlap (cold lap)	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Undercut:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Pin holes:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Porosity (surface):	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Coloration:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>
Burn through:	pass <input checked="" type="checkbox"/>	fail <input type="checkbox"/>

Qualifier [Signature] Date of Test Coupon 12.06.13

Welder [Signature] Date of Test Coupon 12.06.13

The above named individual is qualified in accordance with AWS D17.1.2001 to weld